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The Cuban Navy: A Growing Deterrent Force

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A Research Paper

NGA Review Complete

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Key Judgments

Information available as of 21 December 1982 was used in this report.

A major program for the expansion and modernization of the Cuban Navy has been under way since at least 1977. The process has involved the acquisition of Soviet-built naval combatants, the construction of new naval facilities and the upgrading of existing bases, and some improvements in logistic support and training. In addition, the Navy began redistributing its fleet assets more than two years ago to improve the defense of central and eastern Cuba.

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Soviet naval deliveries to Cuba in recent years have allowed a steady improvement in the Navy's inventory. The delivery of Osa-II guided-missile patrol boats, Turya hydrofoil torpedo boats, and Yevgenya- and Sonya-class minesweepers has allowed Cuba to upgrade its coastal defense forces. The two F-class submarines and a Koni-class frigate from the USSR have improved Cuba's ability to defend against a naval blockade, while the recent delivery of two Polnocny-class landing ships has increased the Navy's amphibious lift capability. Some of the new naval combatants in the Navy's inventory are capable of operating into the eastern Caribbean and the Gulf of Mexico, and they might be used to support Cuba's allies in the region.

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The increase in the Cuban Navy's inventory of ships will require additional bases, as well as logistics and training facilities. A submarine base is under construction at Punta Movida, and facility expansion continues at Cayo Loco in Cienfuegos Bay. A naval base is also being built at Nicaro in northeastern Cuba, and the naval bases at Cabanas and Mariel are being expanded. In addition, a new naval academy is nearing completion at Punta Santa Ana near Havana.

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We believe that the expansion of Cuba's Navy will continue during this decade. The Cubans will probably receive at least four more F-class submarines from the Soviets by 1987. We expect that the Navy will also acquire six to eight additional hydrofoil torpedo boats, from eight to 13 guided-missile patrol boats, and an equal number of minesweepers during this period. Deliveries of at least one additional Koni frigate, as well as two more Polnocny-class amphibious landing ships, are also expected.

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The Navy's expansion and modernization program appears to be primarily defensive in nature and, in our judgment, is designed to increase the cost to the United States of taking military action against Cuba. Indeed, continued expansion of the Navy will enhance Cuba's capabilities to counter an invasion or respond to a naval blockade. In addition, the expansion of Cuba's Navy along the lines we anticipate will pose at least a potential threat to vital shipping lanes that the United States would have to contend with even in the absence of a direct confrontation with Cuba. Moscow has continued to support Cuba's force improvement programs, probably to enhance its image in the region as a reliable ally. By fostering the buildup of the Cuban Navy, it probably also expects the Navy to harass US forces in wartime, forcing the United States to divert resources from high-priority missions.

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Contents

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Appendixes

25X1

Figures

25X1

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25X1

25X1

25X1

Tables

25X1

25X1

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The Cuban Navy: A Growing Deterrent Force

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Introduction

Until 1977, the Cuban Navy (Marina de Guerra Revolucionaria or MGR) consisted of a small fleet of coastal defense patrol boats and subchasers concentrated in the Havana area and a handful of coastal surveillance radar posts. Since then, the Navy has undergone major expansion and modernization, and it has been working hard to overcome some of the deficiencies in its fleet maintenance and training programs. We believe that the net result of these improvements will be a more capable and versatile naval force, better able to defend against an invasion or respond to a naval blockade.

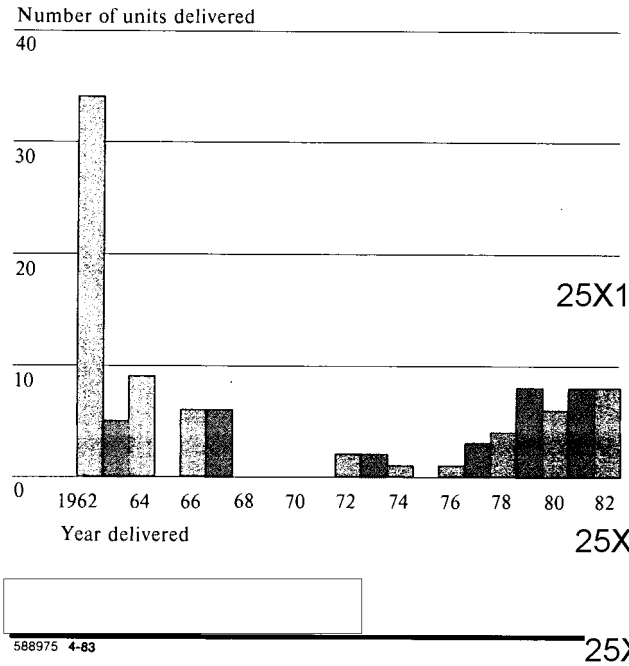
This paper examines the developments that have taken place in the Cuban Navy since 1977, including improvements in its inventory, the redistribution of fleet assets, and the expansion of naval facilities in Cuba. The capabilities of the Navy are assessed by examining its mission and tasks, training, and ship repair and maintenance procedures. The paper also speculates about likely future trends in Cuba's naval forces, including the continuing force expansion that we anticipate during this decade. The expanding capabilities of the Cuban Navy, its potential threat to the Caribbean region, and implications for the United States are discussed in the final section of the paper.

Fleet Expansion and Disposition

The USSR began supplying naval ships—mainly coastal defense patrol craft—to Cuba in 1962.

we calculate that over 100 ships have been delivered by the Soviets during the last 20 years. We have observed an increase in Soviet naval deliveries since 1977, however, including larger and more sophisticated ships. Of the 59 ships in the Cuban Navy that are currently operational, 37 have been delivered since 1977 (figure 1 and appendix A).

Figure 1
Soviet Naval Ship Deliveries to Cuba, 1962–82



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Additions to the Cuban Navy's inventory since 1977 have included two F-class submarines, a Koni-class frigate, two Polnocny-class amphibious landing ships, 12 Osa-II guided-missile patrol boats, six Turya hydrofoil torpedo patrol boats, two Sonya-class and 10 Yevgenya-class minesweepers, and a Pelym-class deperming ship (figure 2).[1]

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The Navy's acquisition of the submarines and frigate has improved its antisubmarine warfare capabilities despite the limitations posed by a lack of sophisticated sonar and radar equipment. The Navy's capability to

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[1] Deperming serves to reduce the magnetic signature of submarines and surface ships, making them less vulnerable to magnetic mines and Magnetic Anomaly Detection.

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Figure 2
Types of Ships in the Cuban Naval Inventory

Figure 2a
F-class diesel attack submarine

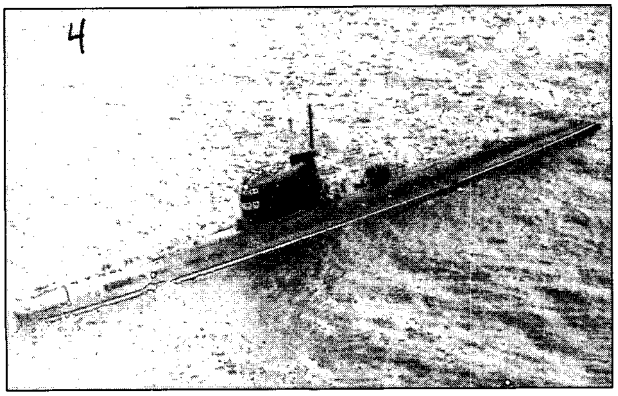

Figure 2b
Koni-class frigate

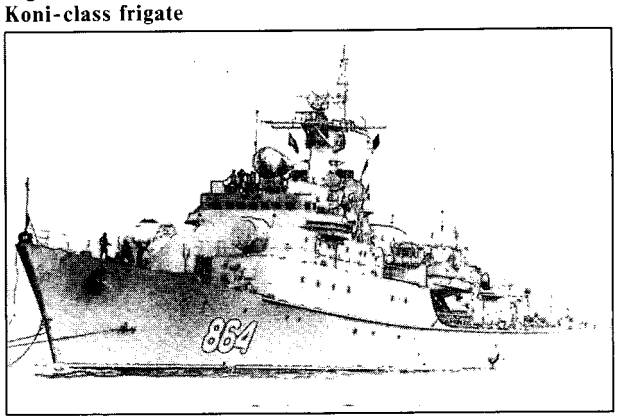

Figure 2c
Osa-II-class guided-missile patrol boat

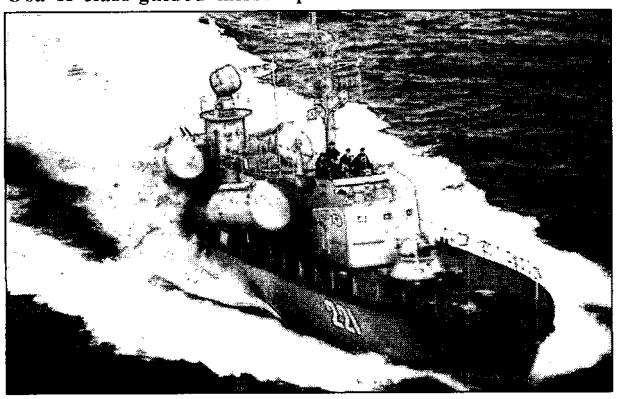

Figure 2d
Turya-class hydrofoil torpedo patrol boat

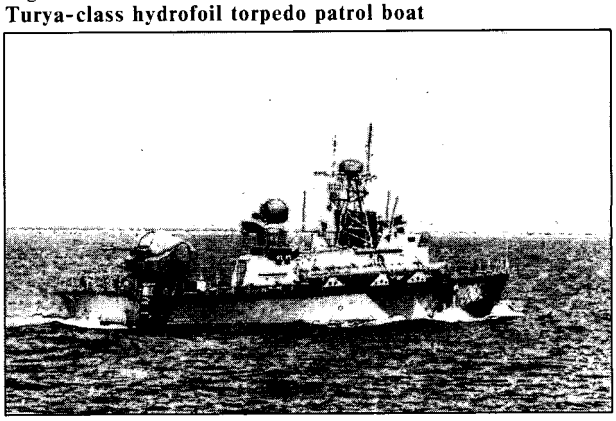

Figure 2e
Polnocny-class amphibious landing ship

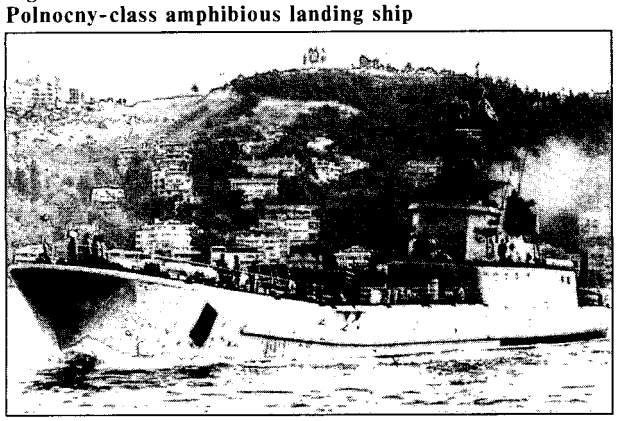

Figure 2f
Sonya-class coastal minesweeper

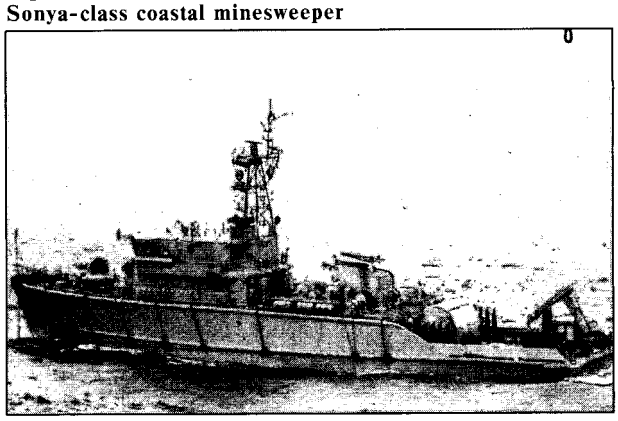

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Figure 2 (continued)

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Figure 2g
Yevgenya-class in-shore minesweeper

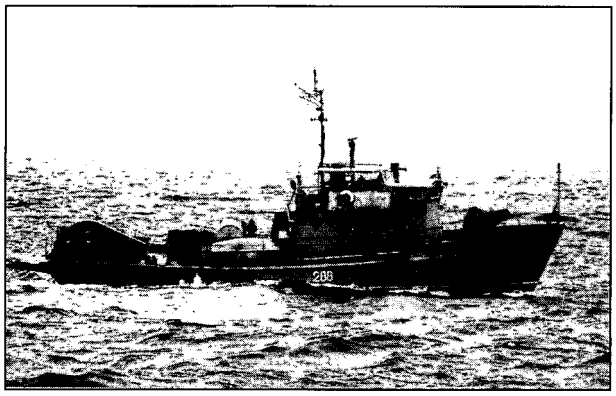
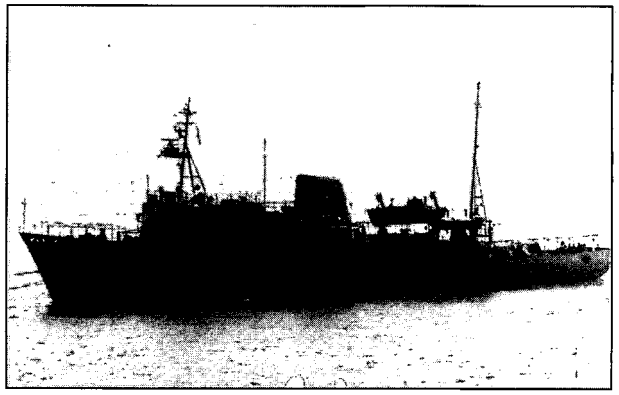


Figure 2h
Pelym-class deperming ship



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counter mines has also been improved with the acquisition of the minesweepers and the deperming ship. The submarines and frigate give the Navy the potential to extend the operational range of its patrols into the Caribbean and Gulf of Mexico, and the new landing ships provide it with a limited amphibious lift capability.

Cuba began restructuring its naval forces in early 1980 to expand the Navy's defensive coverage of the island and to provide more flexibility to the naval district commanders during an emergency. The Cuban Navy is now organized into three naval districts—Western, Central, and Eastern—each directly subordinate to headquarters in Havana (figure 3). The new structure is similar to the organization of the Cuban Navy during the mid-to-late 1960s. Before the reorganization, almost all of Cuba's guided-missile patrol boats were based at Cabanas in western Cuba. Beginning in mid-1980, however, several Osa and Komar missile boats were deployed to Banes and Cienfuegos—which became the headquarters of the newly created Eastern and Central Naval Districts respectively.

several naval facilities are under construction and existing bases are being enlarged and augmented to accommodate the expansion of Cuba's naval forces apparently planned for the remainder of this decade. The largest projects currently under way are in the Cienfuegos area on the southern coast. Construction of a submarine base and naval ordnance depot at Punta Movida on the southeast edge of Cienfuegos Bay was started in early 1977 and is now nearing completion. The base at Cayo Loco, adjacent to the city of Cienfuegos, has also been expanded since early 1981. In addition, a base at Nicaro in eastern Cuba has been under construction for almost three years, and the bases at Cabanas and Mariel—both in the Western Naval District—have undergone major expansion since 1977. Finally, a new naval academy is nearing completion at Punta Santa Ana that will provide expanded facilities for the training of officers.[2]

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Western Naval District

Cabanas Naval Base, the headquarters for the Western Naval District, is the most important missile boat base in Cuba. Six to eight Osa-IIs normally are based

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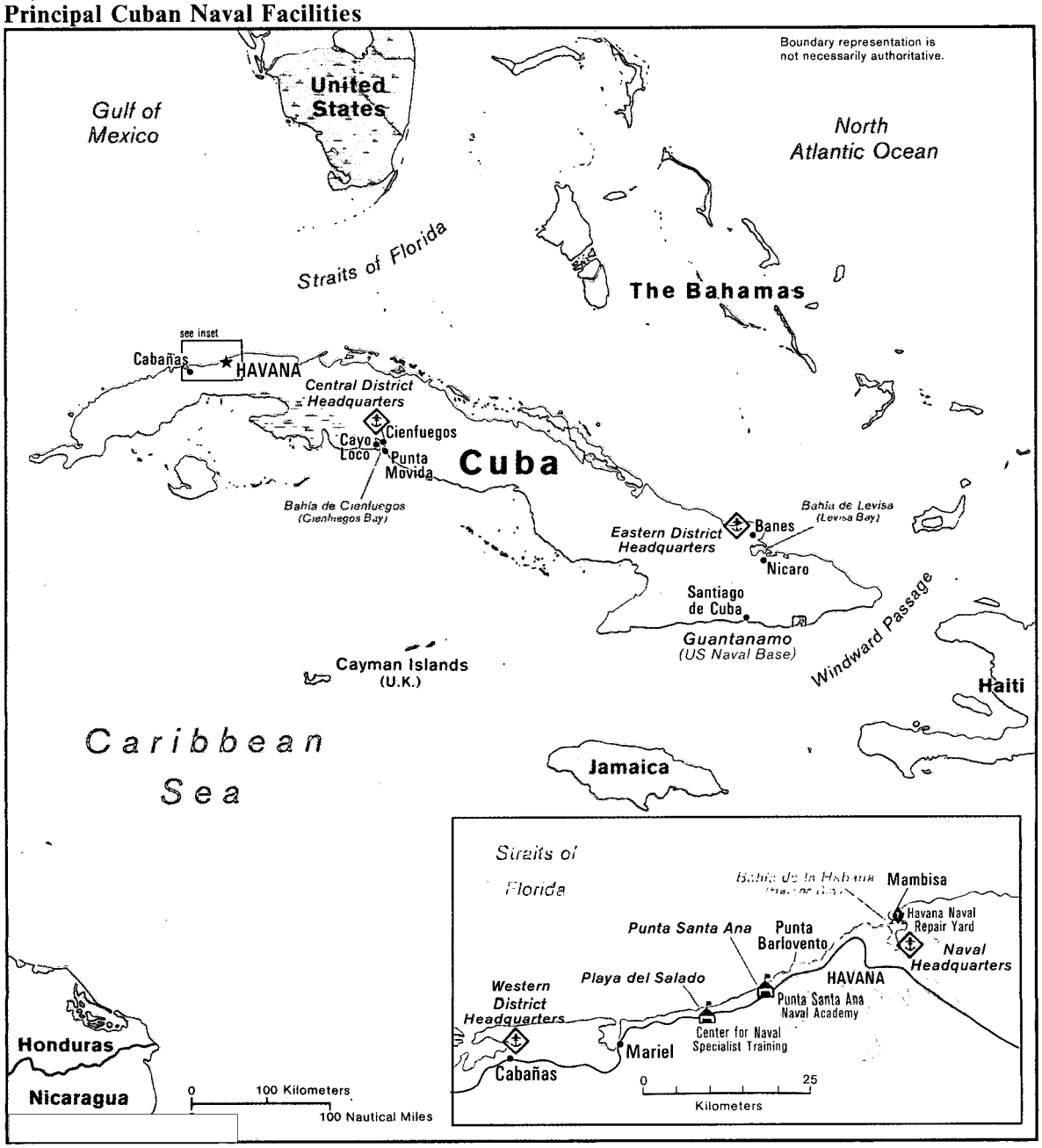
Figure 3
Principal Cuban Naval Facilities



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here, and it serves as home port for the Turya hydrofoil torpedo boats. Navy patrol boats operating from Cabanas perform most of the coastal defense patrols off the northern coast. The facilities at Cabanas have undergone major expansion since 1977, and the repair capabilities of the base have been upgraded.

A berthing quay has been built to accommodate additional missile boats. A new pier and quay have also been constructed for the Turya hydrofoil torpedo boats, as well as for ships undergoing repair at the facility. To support the crews of the Osa-II and Turya patrol boats, additional barracks and training facilities are being built.

The most significant improvement at Cabanas has been the construction of a new repair area, which will allow the Cubans to haul out four vessels simultaneously. Until 1981, only one vessel could be repaired at a time using the 2,000-ton floating drydock at Cabanas. the drydock was sent to Havana for repairs and refurbishing and is now located at Nicaro Naval Base in eastern Cuba.

We have observed a naval ordnance depot under construction southwest of Cabanas Naval Base since mid-1980. Three ordnance storage bunkers are under construction at the depot. In addition, an ordnance checkout building, a precheckout and ordnance transfer building, two vehicle-storage sheds, and two other support buildings at the site are at least externally complete. Although the new depot is isolated from the naval base, there is a good road connecting the two facilities.

The new ordnance depot probably will be completed within the next two years. It will provide complete facilities for the servicing, storage, and repair of naval missiles and torpedoes for the guided-missile and torpedo patrol boats based at Cabanas. The facility will supplement and eventually replace an older naval missile storage site at the base that is now being used only for torpedoes.

Mariel Naval Base is subordinate to the Western Naval District, and before 1980 it served as the primary base for the Navy's SO-1 and Kronshtadt subchasers. The subchasers now operate out of Havana and Cienfuegos, and Mariel is home base for most of Cuba's new minesweeper force. We routinely see up to seven of the Navy's 12 minesweepers at Mariel, and the two Polnocny-class landing ships delivered in late 1982 have been berthed at the base since their arrival.

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A two-sided berthing quay has been under construction on the western side of the bay at Mariel since 1980. A 144-meter-long section of the quay has been completed and is used to berth the Polnocny landing ships and occasionally minesweepers. A Koni frigate could also be berthed here in the future. Still under construction is a 188-meter section of the quay that, when completed, will more than double the berthing capacity of the base. Three buildings are also under construction at Mariel—one on the newly constructed quay and two others near a small berthing pier on the southwestern side of the base.

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Mariel has a limited repair capability provided by the Carbona Ship Repair Yard across the bay from the base. A floating drydock and marine railway there are capable of handling minor ship repairs, but apparently they are seldom used for repairs to naval ships. Mariel-based minesweepers are repaired at the Havana Naval Repair Yard, and the two Polnocny landing ships based at Mariel probably will be sent to Havana for repairs also.

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Central Naval District

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The new naval base and ordnance depot at *Punta Movida* on the southeastern edge of Cienfuegos Bay is the largest naval facility currently under construction in Cuba and probably the most important because of its capability to support submarines.[3] Construction of the piers and the associated support area, as well as barracks, administration buildings, and training facilities at Punta Movida began in early 1977. The first of two 180-meter concrete piers at the base containing service lines for electricity, air, fuel, and waste disposal was completed in late 1978. The second pier was

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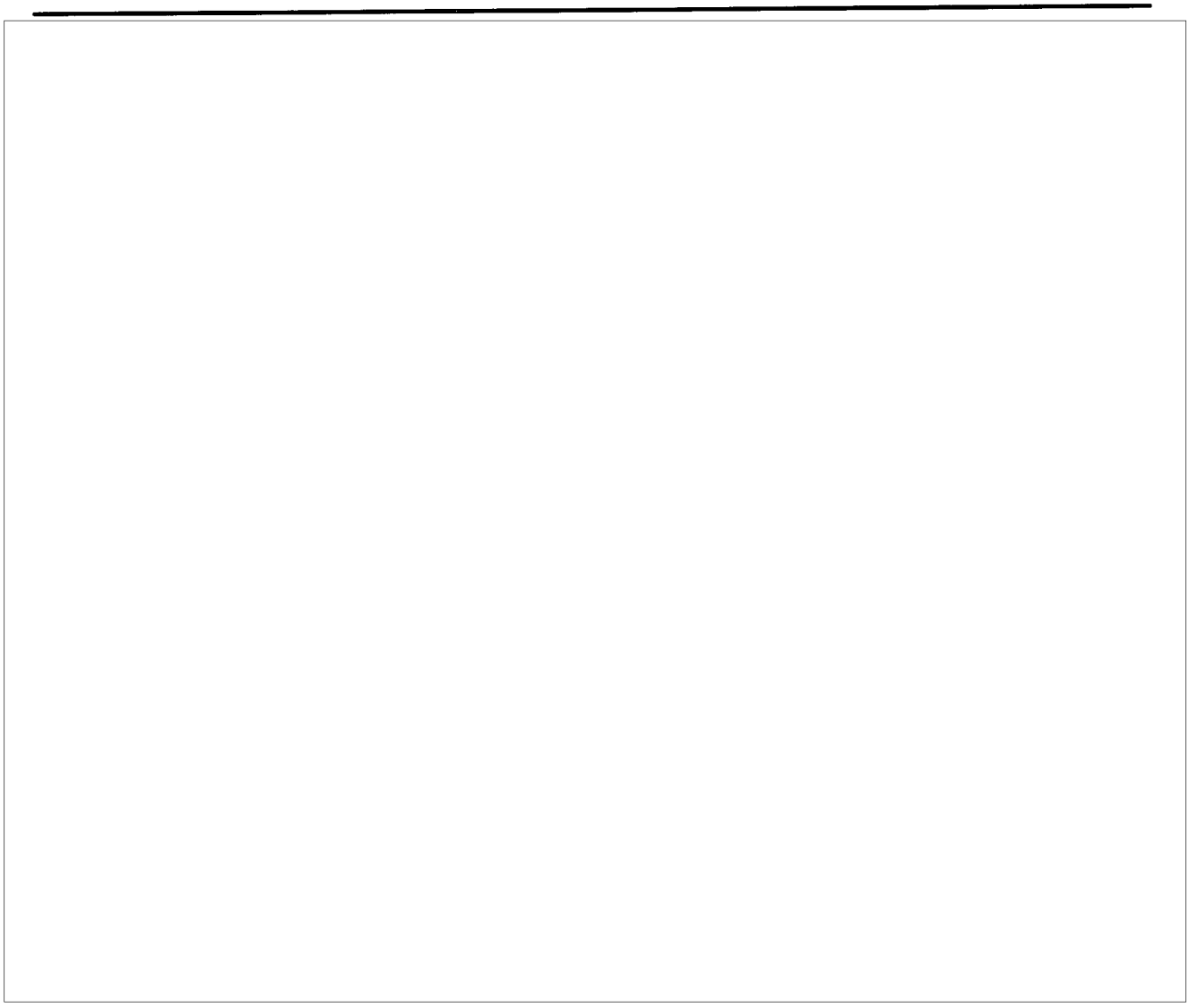

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completed in early 1981 and does not yet have service lines installed. Each of the piers at Punta Movida can berth at least four submarines—two abreast on each side. Work is still continuing on the administration and training area, which also includes a school for submariners. There are no repair facilities at the base; all submarine repairs are performed at the Havana Naval Repair Yard.

Cuba received its first F-class diesel-powered attack submarine from the USSR in February 1979 and a second was delivered in January 1980. The base now serves as home port for the two submarines

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Other naval combatants and training vessels that occasionally put in at the facility can use either of the piers or a small quay located southwest of the piers. In December 1982, a Soviet T-class diesel-powered attack submarine berthed at Punta Movida during one of the visits to Cuba of a Soviet naval task group. Such visits have occurred regularly since the early 1970s.

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Construction of a naval ordnance depot on the eastern edge of the naval base at Punta Movida was started in 1978 and has progressed rapidly over the last two years. The facilities at the depot—designed for the checkout, repair, and storage of naval missiles and torpedoes—include a high-bay or clerestory building for handling torpedoes and missiles, five large ordnance storage bunkers, and 15 storage buildings. Over 100 defensive revetments—similar to others seen throughout Cuba in recent years—are along the perimeter of the depot, which is enclosed by triple fencing.

Several torpedo and torpedo warhead containers were visible in the storage area outside the clerestory building on photography taken between January 1981 and March 1982, and we have periodically observed torpedo transfer operations at the base. The depot probably will also be used to store and repair Styx antiship missiles carried by Cuba's Osa and Komar missile boats, as well as SA-N-4 surface-to-air missiles for its Koni-class frigate. There have been no sightings of naval missiles at the depot, although what appear to be missile transfer operations have been observed at the base. Construction preparations suggest that a quay will be built near the depot to accommodate the delivery and loading of naval missiles and torpedoes.

The naval base at *Cayo Loco,* adjacent to the city of Cienfuegos, serves as headquarters for the Central Naval District. Since the reorganization of the Cuban Navy, it has become the home port for eight Osa-I and Komar guided-missile patrol boats. The base has been expanded substantially since early 1981, apparently to provide additional berthing space and ship repair facilities. A clerestory building and four new support buildings, including at least two repair shops, have been erected. Four of the five buildings are now externally complete, and work on the clerestory building should be completed in early 1983.

it may primarily serve a repair role.

Before the expansion, Cayo Loco's limited repair facilities consisted primarily of a 2,000-ton floating drydock. The drydock has since been refurbished and some of the new facilities being built are probably for repair purposes. When the upgrading of facilities is complete, many of the ships based at Cayo Loco probably will be repaired at the base, resulting in faster turnaround time and relieving some of the congestion at the shipyards in Havana.

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A new berthing quay also has been built at Cayo Loco, probably to support the deployment of Turya hydrofoil torpedo boats and coastal minesweepers yet to be delivered. Minesweepers have operated from here in the past, and the additional Turyas would supplement patrol capabilities. Moreover, the extensive landfill operations on the western edge of the base that began in early 1982 suggest that further e sion of Cayo Loco is planned.

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Eastern Naval District

Nicaro Naval Base, a new facility on Levisa Bay in eastern Cuba, has been under construction since early 1980. Work on the base has accelerated since 1982 and the facility is now capable of berthing naval combatants, although no logistic support assets are in place.

Four were berthed at a recently constructed wharf, and one was in the 2,000-ton floating drydock that was brought from Cabanas last year. Construction is continuing on the wharf and support buildings, and access roads to the new base are being improved.

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The basing of Osa-II missile boats at Nicaro will allow the Navy to increase the range of its defensive patrols off Cuba's eastern coast. The floating drydock also will provide a limited repair capability for these and other patrol boats assigned to the Eastern Naval District.

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Banes Naval Base serves as headquarters for the Eastern Naval District. Guided-missile patrol boats have been present there since 1980,

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The level of activity at Banes increased following the reorganization of the Navy in 1980; up to three Osa-I missile boats were based here before being reassigned to Cienfuegos in 1981, and Osa-IIs operated out of the base until November 1982, when they were transferred to Nicaro. We expect that the headquarters for the Eastern Naval District will be transferred from Banes to Nicaro when the new naval base becomes fully operational.

Ship Repair Facilities

Havana Naval Repair Yard, the primary repair facility for the Cuban Navy, is subordinate to MGR Naval Headquarters.[4] The facility is colocated with Mambisa commercial shipyards on the northeast edge of Havana Bay. All major repairs and overhauls of Cuban naval combatants are done here, as well as some minor repairs. The facility also serves as the initial delivery point for some of the larger ships provided by the Soviets, such as the Koni frigate and the Pelym-class deperming ship. Havana Naval Repair Yard is also home port for the Pelym-class deperming ship, the first such ship the Soviets have exported.

Most of the major construction and expansion at the facility was completed before 1977. The main repair area consists of a 155-meter quay flanked by two 90-meter piers. The rebuilding of an 80-meter berthing pier on the east side of the main repair area was completed in 1982.

Despite the expansion of repair facilities at other Cuban naval bases since 1977, Havana has the only repair yard capable of repairing ships larger than an Osa missile boat.

Missions and Capabilities

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Coastal Defense

The primary mission of the Cuban Navy is to prevent infiltration of coastal waters and provide in-depth defense against an amphibious invasion. A network of coastal surveillance radars and visual observation posts assists in monitoring and detecting activity off Cuba's coast. The Navy's coastal defense forces are also augmented by the Cuban Air Force and the Interior Ministry's Border Guard Troops (TGF).

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The Navy's guided-missile patrol boat force, consisting of 13 Osa-II-, five Osa-I-, and four Komar-class missile boats coupled with its two submarines, one frigate, and six hydrofoil torpedo boats, is its first line of coastal defense (figure 6). Each Osa-I and Osa-II carries four Styx (SS-N-2b) antiship missiles. The Komars are armed with two Styx missiles. The Styx has a maximum range of 46 kilometers.

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The Cuban missile boat fleet has undergone a gradual upgrading over the years. The Navy's original inventory of 18 Komar boats was supplemented in the early 1970s by five Osa-Is, and 13 Osa-IIs have been delivered to Cuba since 1976. Many of the older Komars have been dropped from the Navy's inventory and some have been converted to torpedo patrol boats. The Navy's second line of defense includes its eight torpedo patrol boats and five SO-1 subchasers.

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Because the Navy has no aviation of its own, the Cuban Air Force provides aerial support for the Navy's coastal defense effort.

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We believe the Air Force's MIG-21s and MIG-23s, along with the Navy's missile boats, would also be the mainstay in any effort to respond to a naval blockade.

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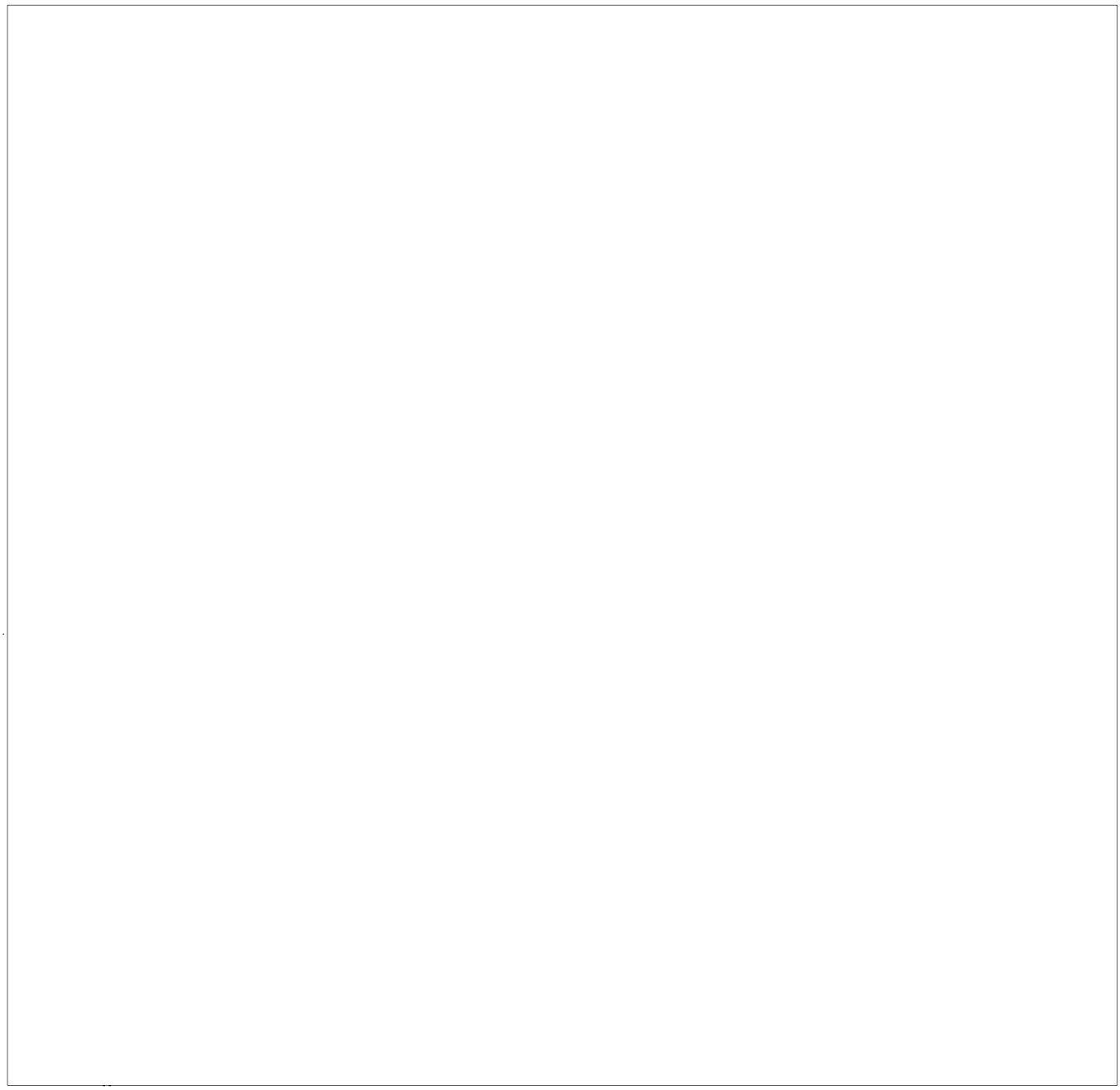

During an emergency, the 3,500-man Cuban Border Guard Troops would probably also come under the operational control of the Navy. The Border Guard is essentially a coast guard force responsible for detecting and intercepting any illegal infiltration or exfiltration attempts. It is equipped with older Zhuk-class patrol boats and a variety of other small patrol craft.

The Cubans deployed Soviet-built Salish and Samlet cruise missiles with a maximum range of 90 kilometers to coastal defense sites along the northern coast during the mid-to-late 1960s. These sites were deactivated by 1969, but the missiles may be in storage. Although it cannot be

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Figure 6
Maximum High-Speed Operating Radii of Cuban Navy Osa Guided-Missile Patrol Boats

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ruled out that they might be brought into service, we doubt that they could have been stored for this length of time without suffering serious deterioration. The Cubans may also intend to use SA-2 surface-to-air missile sites along the coast to supplement their coastal defenses in the event of an invasion.

ASW and Mine Countermeasures

Cuba's acquisition of two F-class submarines and a Koni-class frigate in recent years has improved the Navy's antisubmarine warfare (ASW) capability only marginally.

The Cuban Navy lacks sophisticated sonar and radar equipment, and this continues to hamper its ASW operations. With the exception of the Koni frigate and F-class submarines, none of the surface ships in the Navy's inventory are equipped with modern submarine detection equipment. Moreover, the six Turya hydrofoil torpedo boats the Soviets have delivered to Cuba are export models that lack modern dipping sonar. Because of their age, the Navy's few remaining operational SO-1 subchasers are probably effective in detecting and attacking submarines only within the immediate confines of a harbor.

The delivery of 10 Yevgenya-class in-shore minesweepers since 1977 and two Sonya-class coastal minesweepers in 1980 and 1981 has allowed the Cubans to upgrade their capability to counter naval mines.

The Cubans have stationed minesweepers in most major ports and probably have contingency plans to counter an enemy attempt to mine the harbor entrances and bottle-up their Navy in these po

Specialized Units

We believe this force consists of some 400 men—approximately a battalion—based at Mariel. A photograph in a Cuban magazine article, apparently taken during one of the Navy's amphibious training exercises, showed naval infantry units equipped with Soviet BTR-60 armored personnel carriers landing on a Cuban beach (figure 7). The article asserted that the Cuban naval infantry had a defensive mission and, in contrast to the US Marine Corps, is not intended to be used for

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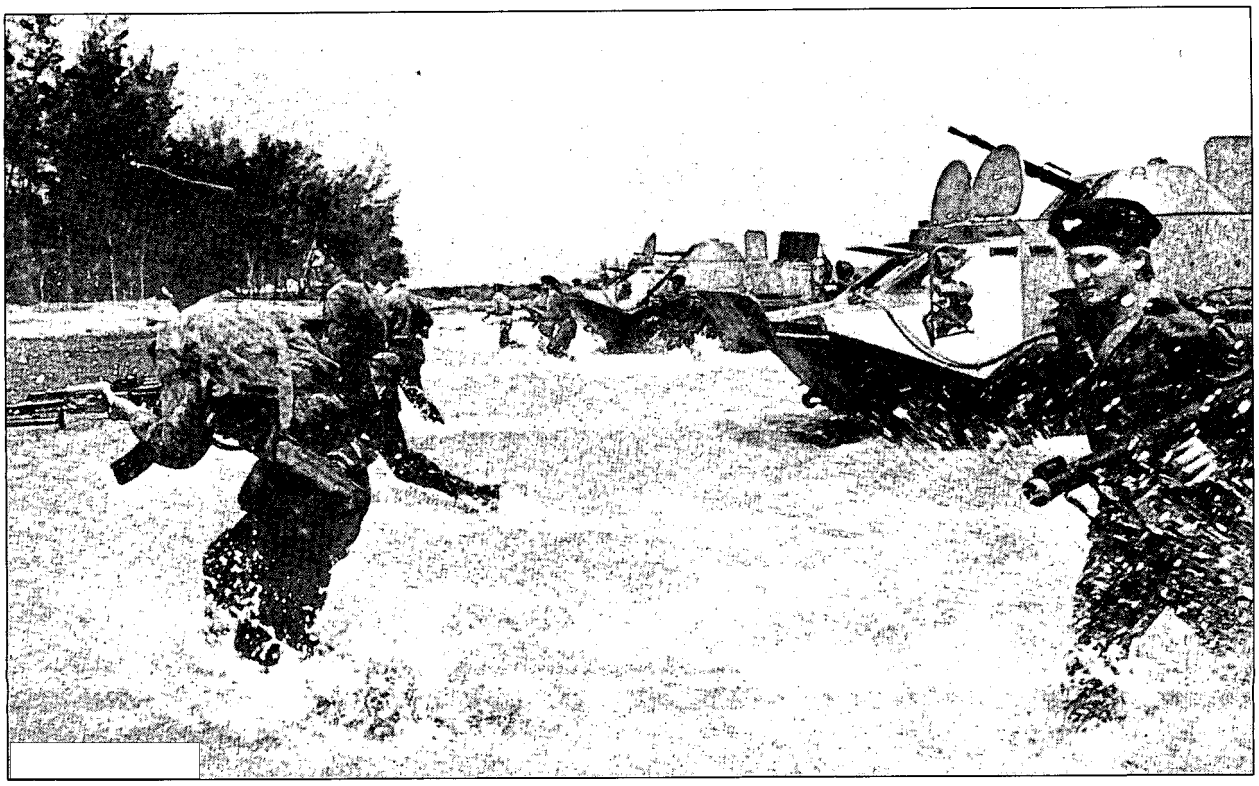
Figure 7
Cuban Naval Infantry Amphibious Landing Exercise



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Until recently, the Navy's amphibious lift capability was almost nonexistent. The six older T-4-class landing craft in its inventory are not capable of carrying troops and equipment on the open sea, but the two Polnocny landing ships acquired by Cuba since last September now give the Navy its first capability to land troops and armored vehicles on distant beaches. The Polnocny, although used by other Third World countries as a logistic resupply vessel, can transport up to 180 troops or six armored vehicles with crews a distance of 1,500 miles—virtually anywhere along the Caribbean Basin littoral.

Although the acquisition of the Polnocny landing ships and the establishment of a naval infantry give Cuba the potential to conduct small-scale amphibious assault operations, we do not know whether the Cubans would use this new capability for offensive purposes. In our judgment, Cuba's Merchant Marine and Air Force probably would be hard pressed to provide the high level of logistic and air support necessary for any such offensive action.

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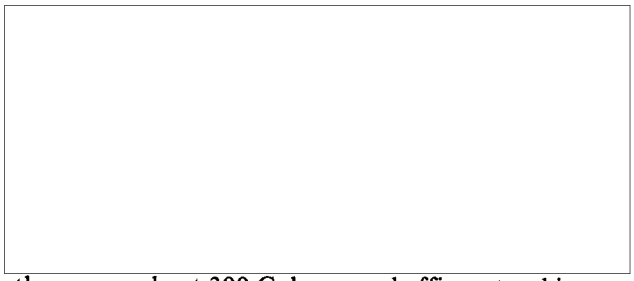
Also, according to the same article three Cuban merchant ships—Vietnam Heroico, XX Aniversario, and Jose Marti—have been assigned to serve as training ships for the Naval Academy. A berthing quay was completed in mid-1979 and the channel entrance to the facility has been dredged, but none of these ships has been seen at Punta Santa Ana to date.

the new facility is designed to cover the officer requirements of not only the Cuban Navy, but also the Merchant Marine and fisheries industry. officer cadets are required to complete a six-month introductory course in basic seamanship before commencing their specialized studies in navigation, electronics, electrical engineering, and mechanical engineering. Graduates of the academy are commissioned as teniente de corbeta (corvette lieutenants)—equivalent to US Navy ensigns—in the Cuban Navy or Merchant Marine.

The new academy is part of the Navy's long-term modernization and expansion program, and will allow the Navy to expand its officer training program from approximately 500 students and 120 graduates per year to over 2,000 students and 500 graduates per year—numbers consistent with the observed size of the new facility. over 2,000 students, including some 200 from African and Latin American countries, attended the academy from 1977 to 1979

Naval Academy

Construction is continuing on the new naval academy at *Punta Santa Ana,* between Havana and Mariel, which we believe has been in at least partial operation since 1979 and will eventually replace the aging facilities at the old Mariel Naval Academy, which dates from 1916. The new academy will have at least 13 major buildings, including classrooms, barracks, and administration and support structures. Construction of the two largest multistoried structures—probably classrooms and barracks—was started in late 1975. By mid-1979 these were complete, and seven other major buildings were completed by late 1981. According to an article in *Verde Olivo,* the Cuban armed forces magazine, the new academy will have athletic and recreational facilities, an antenna field, repair shops, and berthing facilities for the academy's training ships.



there were about 300 Cuban naval officers teaching at the academy. In addition, 15 Soviet officers were present to advise the Cubans on academic programs and policies.

Some postgraduate training courses, probably designed to prepare line officers for key command and staff positions in the Navy, are also reportedly offered at the Naval Academy. It is not clear if these courses are conducted at the Mariel or Punta Santa Ana facility. Some Cuban naval officers and enlisted men are also selected to receive training in the USSR. approximately 60 graduates of the Naval Academy in 1979 were sent to the USSR for a five-year course of study at the Soviet submarine school in Leningrad. The Cubans are apparently establishing their own submarine school at the Punta Movida Naval Base.

Training for naval enlisted personnel is conducted at the Center for Naval Specialist Training at Playa del Salado. New recruits undergo 45 days of basic training at the center before receiving specialized technical training in navigation and seamanship, marine engines, electronics, sonar, radar, radio communications, and signaling. Training for the Navy's frogman unit also is given at the center. An estimated 800 students are assigned to the school at any given time and are taught by some 25 Cuban instructors and a handful of Soviet advisers.

Future Force Expansion

We believe the Cuban Navy will continue to expand during the mid-1980s. We base this judgment on the following evidence:

- The capacity of the naval facilities now being built in Cuba to accommodate new ship deliveries and provide additional logistic and ship repair capabilities.
- The pattern of Soviet ship deliveries to Cuba over the past five years and the Soviet capacity to produce naval vessels for export.
- Our projections of what it will take for Cuba to flesh out its recently reorganized fleet structure in terms of the number of ships and support facilities. 25X1
- Our extrapolation of the Navy's overall manpower levels implied in the observed capacity of its shore facilities to house and train additional personnel.

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The rate of expansion will depend, as always, on continued Soviet deliveries of ships as well as spare parts, ammunition, petroleum, and technical assistance. Soviet assistance levels will be affected, of course, by a host of variables, not the least of which will be the USSR's own military and economic needs, the requirements of Moscow's other allies, and the overall tenor of Soviet-Cuban relations. We assume the Soviets have been intimately involved in planning the expansion of the Cuban Navy that has occurred to date, and, barring unforeseen circumstances, that Soviet naval ship deliveries and other assistance to the Cuban Navy will continue through the mid-1980s at the levels that have prevailed over the past five years. The support structure now under construction in Cuba appears sufficient to handle such a buildup.

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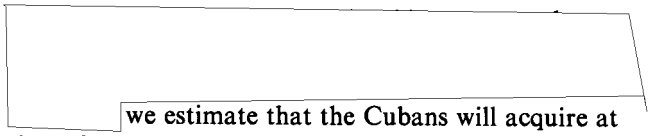

we estimate that the Cubans will acquire at least four additional F-class submarines by 1987. The Cubans may also soon take delivery of their second Koni-class frigate; of the two Koni frigates now being built in the USSR, one is of the same type previously exported to Cuba and could be ready for shipment by this summer.

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On the basis of our studies of Cuba's naval expansion program to date and of Soviet ship production capacity, we estimate the Cubans will continue to upgrade their coastal defense forces with the acquisition of six to 10 more Osa-IIs, as well as two or three larger

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Nanuchka-class missile boats. With the acquisition of these new missile boats, we expect that most, if not all, of the Navy's older Komars and torpedo patrol boats will be phased out by 1987. In addition, Cuba's inventory of Turya-class hydrofoil torpedo boats probably will double, and we expect the number of Yevgenya- and Sonya-class minesweepers in the fleet to increase substantially. We also expect deliveries of one or two additional Polnocny-class amphibious landing ships during this period.

We estimate that the number of combatants in the Cuban Navy's inventory could increase by as much as 40 percent by 1987 (table 1). This growth will require additional personnel to man these ships and keep them operational. The Navy is currently estimated to have a strength of 12,000, including 10,550 enlisted men and 1,450 officers. By 1987, we believe that the Navy's manpower levels could possibly increase by as much as 40 percent or approximately 4,800 personnel, including at least 500 additional officers.

the expansion under way at Punta Movida, Nicaro, Cabanas, and Mariel includes the construction of additional barracks and training facilities that could accommodate such an increase in personnel.

Table 1
Estimated Inventory of Principal Ships in the Cuban Navy, 1982 and 1987

Type/Class	1982 [a]	1987
Submarines [b]		
F-class	2	6
Guided-missile patrol boats		
Komar class	4	0
Osa-I class	5	5
Osa-II class	13	19-23
Nanuchka class	0	2-3
Frigates		
Koni class	1	2-3
Submarine chasers		
SO-1 class	5	0
Turya-class hydrofoil	6 [c]	12-14
Motor torpedo boats		
Converted Komar class	4	0
P-4 class	4	0
Minesweepers		
Yevgenya class	10	15-19
Sonya class	2	4-5
Amphibious landing ships		
Polnocny class	2	3-4
Other ships		
Pelym-class ADG	1	1
Total	59	69-83

[a] 1982 figures include operational ships only.
[b] Not included is one W-class submarine that is nonoperational and serves as battery barge.
[c] Two additional Turyas delivered in January 1983.

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Implications for the United States

The Navy's expansion and modernization program appears to be primarily defensive in nature. It is our judgment that the present composition of the fleet or the ships expected to be delivered over the next five years will not provide Cuba with an offensive-oriented Navy. We do not expect, for example, that the Soviets will provide Cuba with guided-missile cruisers or destroyers until the early 1990s, if at all. Instead, the Castro regime appears intent on deterring a major invasion or naval blockade by the United States. Havana probably recognizes that it would be crushed in a major clash with US forces, but in our judgment it sees the expansion of its Navy as a means of further increasing the cost to the United States of taking military action against Cuba.

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The Cuban Navy is already trained and equipped to engage an invasion force or counter a blockading force close to its shores. The expansion and modernization program will continue to enhance these capabilities and allow the Navy to respond to a more

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distant blockade or possibly to undertake some type of limited offensive action. Some of the new ships in the Navy's inventory are capable of operating into the eastern Caribbean and the Gulf of Mexico. They might be used for the covert transport of personnel and supplies in support of Cuba's allies in the region such as Nicaragua and Grenada. Because the size of its fleet is still limited, however, Havana would probably be reluctant to stretch these resources too far, such as by challenging a US naval blockade of Nicaragua, for example.

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As its inventory of submarines and modern surface ships increases and the additional basing facilities now being built are completed, the Navy will be able to expand the operational range of its defensive patrols. We expect that the redistribution of the Navy's assets among the Western, Central, and Eastern Naval Districts will continue into the mid-1980s and that additional submarines and surface ships will be based at the facilities now under construction.

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Continued acquisitions of submarines, frigates, and guided-missile patrol boats will also improve Cuba's capability to react to a naval blockade. If Havana were willing to risk a major escalation, for example, it could respond to a US blockade by harassing traffic to the naval base at Guantanamo or interdicting unescorted merchant ships bound for US ports in the Gulf of Mexico.

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Even in the absence of a direct confrontation between the United States and Cuba, the expansion of the Cuban submarine force alone could complicate US strategic planning. To date Cuba's F-class submarines have not ventured beyond coastal waters, but they are capable of operating throughout the Caribbean and Gulf of Mexico, or even into the Atlantic. An expanded Cuban submarine force could eventually pose a threat to vital sea lanes in the region. In the event of a crisis in Europe or the Middle East, for example, the United States would have to contend with the potential threat of Cuba's submarines to resupply convoys carrying fuel and vital supplies from US Gulf ports through the Straits of Florida or the Yucatan Channel.

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By sponsoring the buildup of Cuba's Navy, the USSR probably expects that it will at least be able to keep US forces in the Caribbean off balance. In a wartime situation, it could force the United States to divert resources from high-priority missions in other areas to counter this threat

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Appendix A

Table 2
Inventory and Disposition of Principal Ships in the Cuban Navy

Ship Class/Type	Year Delivered																					Total	Operational, 1982	Disposition						
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982			Mariel	Cabanas	Punta Movida	Cienfuegos	Banes	Nicaro	Havana
F-class submarine																		1	1			2	2			2				
W-class submarine																		1				1	0							1
Koni-class frigate																				1		1	1							1
Polnocny-class landing ship																					2	2	2	2						
Osa-II-class guided-missile patrol boat															1	1	3	2		2	4	13	13		8				5	
Osa-I-class guided-missile pátrol boat											2	2	1									5	5				5			
Komar-class guided-missile patrol boat	12				6																	18	4				4			
Turya-class hydrofoil torpedo boat																		2	2	2		6	6		6					
Kronshtadt-class submarine chaser	6																					6	0							
SO-I-class submarine chaser		3	3			6																12	5		1	3				1
Converted Komar-class torpedo patrol boat																							4				4			
P-6-class torpedo patrol boat	12																					12	0							
P-4-class torpedo patrol boat	4	2	6																			12	4		4					
Pelym-class deperming ship																					1	1	1							1
Sonya-class coastal minesweeper																			1	1		2	2	1	1					
Yevgenya-class in-shore minesweeper																2	1	2	2	2	1	10	10	5		4			1	
Total	34	5	9	0	6	6	0	0	0	0	2	2	1	0	1	3	4	8	6	8	8	103	59	8	20	9	13	0	6	4

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Appendix C

Fleet Repair and Maintenance

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The Cubans are totally dependent on the USSR for ship deliveries, which come to Cuba under tow or on board Soviet merchant vessels. the USSR also has provided the Cuban Navy with fuel, spare parts, ammunition, and technical assistance to ensure that these ships are properly and efficiently utilized. In addition, the Styx antiship missiles—also supplied by the Soviets—that are used on Cuba's Komar and Osa missile boats and frequently fired in training exercises must be continually replaced.

All major repairs and overhauls of Cuban submarines and surface ships are done at the Havana Naval Repair Yard. Because of their size, Cuba's Koni-class frigate, Polnocny-class landing ships, and the Pelym-class deperming ship also will be repaired here. Surface combatants overhauled here have included Osa-I and Osa-II missile boats and Turya-class hydrofoil torpedo boats.[5]

Overhauls to surface ships have included engine removal and the repair of electronic and weapons systems. The longest overhaul for these surface ships takes about three months. The submarine overhauls have involved a prolonged yard stay and several periods in the repair dock, and probably have consisted of work on the the propulsion and weapon systems.

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Some minor repairs are also performed at Havana, but more of this work is being performed at facilities in the three naval districts. Minor repairs consist of hull cleaning, general maintenance, and inspection and limited repair of weapons. Minor repairs require from three days to several months.

[5] The chart at the end of this appendix presents the findings from our study of Cuban naval repair and maintenance procedures it details the overhauls, repairs, and maintenance, as well as the in-service rates of Cuban submarines and patrol boats.

Patrol Boat Repairs

The frequency of repairs to the Osa-I missile boats has remained constant since 1980; one Osa-I is usually at Havana being overhauled and the other four are at Cienfuegos, where one is occasionally seen in drydock undergoing minor repairs. Overhauls on the Osa-Is at Havana have consisted of work on the missile tubes and the forward and aft gun mounts, as well as engine removal and electronics repair. Weapon systems are frequently repaired and sometimes removed for overhaul. Most of the Osa-Is at Havana have had a canvas covering over the forward gun mount as well as the open missile tubes during overhaul.

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The Osa-IIs are based and repaired at two naval bases—Cabanas and Nicaro. Overhauls on the Osa-IIs are similar to those on the Osa-Is.

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Since early 1981, up to three of the six Turya hydrofoil torpedo boats have been observed at any time undergoing repairs at the Havana Naval Repair Yard. The longest period that a Turya has been seen at Havana is two months. Although we cannot confirm that any overhauls on the Turyas have taken place, we have seen work on the torpedo tubes and probably the electronics systems. Most of the repairs on these vessels are accomplished using the transverser in the repair area at their home base of Cabanas, but we believe that more of the Turyas will be repaired at Havana in the future.

Submarine Repairs

The F-class submarines based at Punta Movida are frequently seen at the Havana Naval Repair Yard due to the lack of repair facilities at their home base. Mambisa Shipyard also has the capability to repair submarines, and although it is a civilian repair yard, a

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submarine was repaired there between December 1980 and April 1981. This was unusual and we do not expect to see submarine repairs performed at Mambisa on a regular basis.

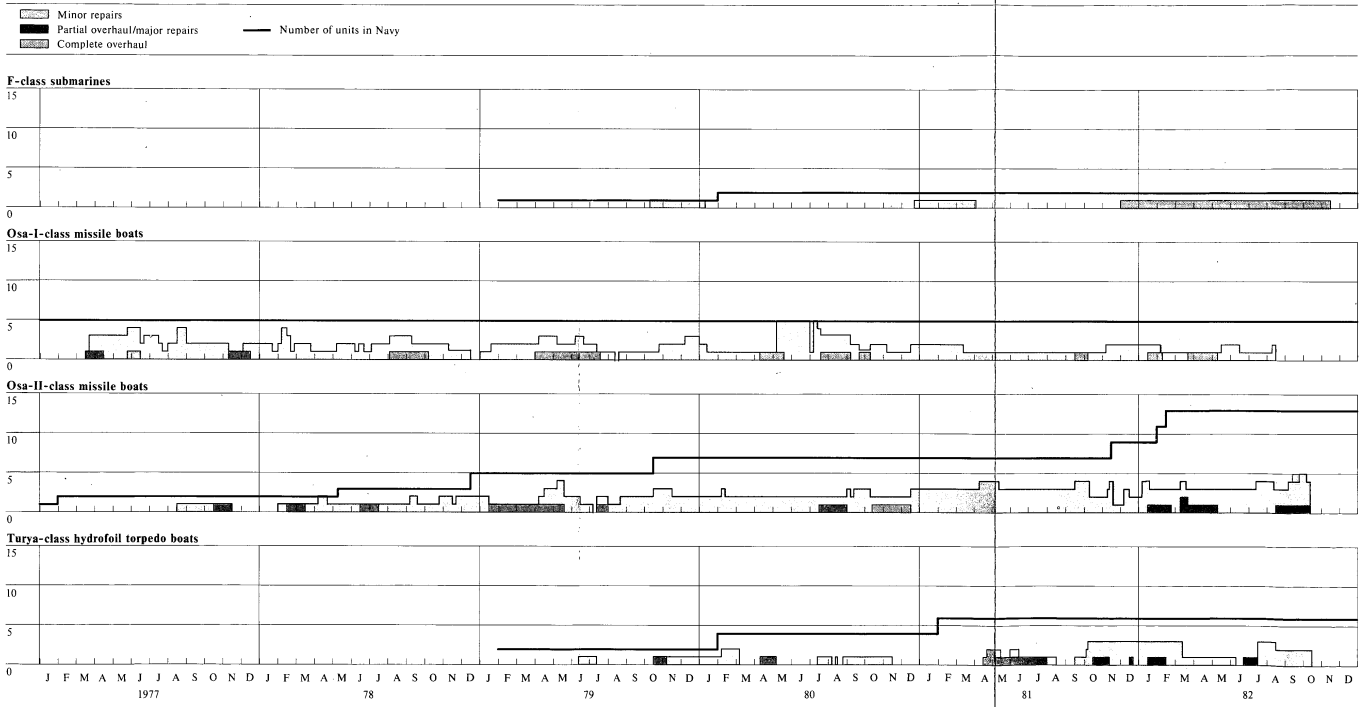
The first submarine overhaul observed at Havana Naval Repair Yard took place between December 1981 and November 1982. Twenty-three months after its initial repairs at Havana—November 1979 to January 1980—the first F-class submarine returned to Havana for overhaul and maintenance. This overhaul required approximately 11 months and included several periods in the repair dock. When the work was completed, the submarine returned to Punta Movida to resume operations. On the basis of this overhaul pattern, we expect to see Cuba's second F-class submarine in Havana for overhaul during early 1983.

Minor repairs of submarines are also done at Havana. These repairs probably consist of inspections to ensure that all systems are operating normally and usually do not require extended work. We have seen two such repair periods to date and expect that the time now required for these repairs—two to four months—will be reduced as the repair crews gain more experience.

In-Service Rate

On the basis of our studies of the Cuban Navy's overhaul and maintenance procedures since 1977, we estimate that some 20 to 40 percent of the Osa missile boats and up to 50 percent of the Turya torpedo boats in its inventory are under repair at any given time. Because there are only two operational submarines in the Cuban inventory and the time required for submarine repairs is considerably longer than that for the patrol boats, up to 50 percent of the submarine force may be out of service at any time. This means that no more than 60 to 85 percent of Cuba's coastal defense force—patrol boats and submarines—is available for operations during a given period of time.

Figure 21
Overhauls, Repairs, and Maintenance on Submarines, Missile and Hydrofoil Torpedo Boats, 1977-82



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